

# Modified Lip Split Incision To Approach The Posterolateral Tongue: A Case Report

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## ABSTRACT

**Introduction:** The lower lip-split incision was first described by Roux in the mid 19<sup>th</sup> century and was later modified by Trotter and Konig. This incision has been widely used in the field of head and neck oncology surgeries for accessing intraoral tumours along with its extension in neck dissection when combined with mandibulectomy or mandibulotomy. Over the years, this incision has been modified to improve the aesthetic outcomes especially focussing on the chin pad contouring and postoperative scarring.

**Case Report:** We report a case of moderately differentiated squamous cell carcinoma of the right lateral side of tongue in a 60year old female patient who underwent hemiglossectomy, the surgical approach being the mainstay to deliver the tumour in toto with sufficient clear margins. We have also discussed the lip split incision technique for adequate exposure of the posterolateral tongue to ease in delivering the tumour. Patient recovered uneventfully and was discharged after 6 days following the surgery.

**Conclusion:** In our experience modified lip splitting incision used here is ideal to approach the posterolateral tongue carcinomas and also help in rapid recovery from this type of mutilating surgeries.

**Keywords:** Lower lip split incision, Squamous Cell Carcinoma, Posterolateral Tongue

## INTRODUCTION

Squamous Cell Carcinomas comprises of 90% of all Oral Cancers.<sup>1</sup> The primary importance is the adequate margins in a composite resection of oral carcinomas. Further considerations include the cosmetic result of the patient after the operation. Most intraoral tumors may be accessed and excised through an intraoral approach. However, in cases where access is poor and a wide exposure is needed, a splitting of the lower lip can be done.<sup>2</sup>

Roux in mid-19<sup>th</sup> century first described lower lip splitting procedure which was later modified by Trotter and Konig. A total number of 60 patients were treated with various lip splitting incisions between 1992 and 1998 and were assessed for the functional and aesthetic results of the lower lip split. The use of lower lip splitting incision has been widely used in head and neck oncologic surgery for access to the intraoral, pharyngeal, and parapharyngeal tumors and allow access to the cervical part of the spinal column, can be combined with a mandibulotomy or mandibulectomy and allowing a neck dissection to be performed as it can be extended as a neck dissection incision. Good exposure to the site of operation is essential for an adequate three-dimensional resection of the tumour. The access to posterolateral tongue can be achieved through a variety of means with a difficulty in adequate exposure and a risk potential of the adverse aesthetic and

functional outcomes postoperatively. Aesthetic lip splitting procedure can greatly enhance exposure during excision of a bulky lesion and facilitate subsequent wound closure.<sup>3</sup>

The incision used in our case offered optimal exposure and visualization without disfigurement and loss of function with low morbidity.

## CASE REPORT

A 60 year-old female reported to the oral and maxillofacial clinic with a chief complaint of slowly enlarging ulcer on the right side tongue with difficulty in swallowing since 6 months. Intraoral examination revealed an ulceroproliferative lesion measuring 3.5 cm\*2 cm in diameter on the right lateral border of the tongue was present and was tender on palpation (Figure 1).

MRI scan showed an altered signal intensity lesion of size 3 cm (CC)\*2 cm (AP)\*1.5 cm (Tr) involving right lateral border of the tongue with enlarged right jugulodigastric lymph node measuring 2cm in short axis.

A clinical diagnosis of Squamous Cell carcinoma was made. A hemiglossectomy with Modified Radical Neck Dissection II was planned and using the modified lower lip split incision to approach the posterolateral tongue. Nasal endotracheal intubation was done for general anaesthesia. Vital signs were maintained within the normal limits. Painting with 5% povidone-iodine and draping was done. Local Anaesthesia (1:80,000) was injected at the site of the incision. A separate lip split incision was made to expose the posterolateral tongue following neck dissection (Figure 2).

Layer by layer dissection was done. Facial vessels were identified, clamped, cut and ligated. Tumour on the posterolateral tongue was exposed. Hemiglossectomy was done and the specimen with 1cm margins was delivered (Figure 3).

Intraoral tongue defect was sutured in a continuous manner using 3-0 vicryl sutures. Layer by layer closure was done with vicryl 3-0 and skin was closed with 3-0 silk suture. The post operative healing was uneventful. Patient recovered un

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**How to cite this article:** Nitin Bhagat, Harsh Jain, S Dandagi, Aviral Verma. Modified lip split incision to approach the posterolateral tongue: a case report. International Journal of Contemporary Medical Research 2016;3(5):1471-1473.

eventfully and was fed on ryles tube for 7 days, and was discharged after 6 days.

The specimen was x-rayed to know radiographic clear margins followed by histopathological examination. Microscopically, hematoxylin and eosin-stained section showed the presence of islands and sheets of dysplastic epithelial cells in the connective tissue stroma along with presence of keratin pearls. Few areas also showed cords and islands of atypical squamous cells infiltrating into muscle fibers. Submandibular lymph nodes and Juguloomohyoid group of lymph nodes showed metastasis with areas of atypical squamous cells, presence of keratin pearls and areas of keratinisation. Hence, the final diagnosis of Moderately Differentiated Squamous Cell Carcinoma with metastasis in Level I and Level III group of lymph nodes was made.

Patient is under regular follow-up since then and there are no signs of recurrence or any fistula formation and infection (Figure 4).

**DISCUSSION**

The most challenging surgical aspects include difficulty in obtaining adequate access to lesions of floor of the mouth or those situated on the medial aspect of posterior mandible often. The preservation of important anatomic structures in the adjacent regions comes to an edge when the need for free access and ample exposure of those lesions is required. The desire for preservation of vital structures is heightened when the lesion is benign, however, is situated in an inaccessible location. In dealing with a malignant lesions, the bone, nerves and other structures have to be sacrificed in order to achieve an adequate ablation. Surgeries at the, pterygomandibular, floor of the mouth and posterolateral tongue region may be difficult unless adequate access is achieved.

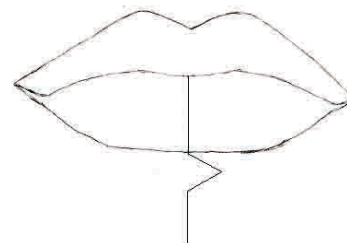
A straight line vertical split of the lower lip to the midline of mandibular symphysis was described by Diefenbach in 1834, Burow in 1855 and Bernard in 1853. This technique is simple and reliable but has cosmetic and functional disadvantages. The scar contraction leaving a notched vermilion and the distended chin,<sup>4</sup>

A modification of the lower lip split was described Konig in 1922 where a vertical incision is made starting at 1.5 cm medially to the oral commissure and descending vertically to the lower mandibular border. This incision can be elongated

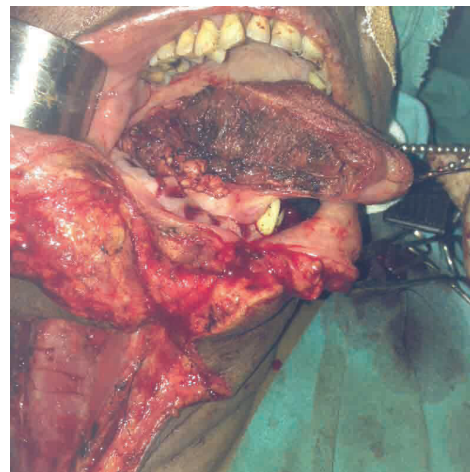
into a collar incision as well.<sup>5</sup>

The mandibular midline split as part of the anterior translingual pharyngotomy was used by Wilfred Trotter in 1929 for the removal of the lesions of epiglottis, base of the tongue and associated glossoepiglottic fold.<sup>6</sup>

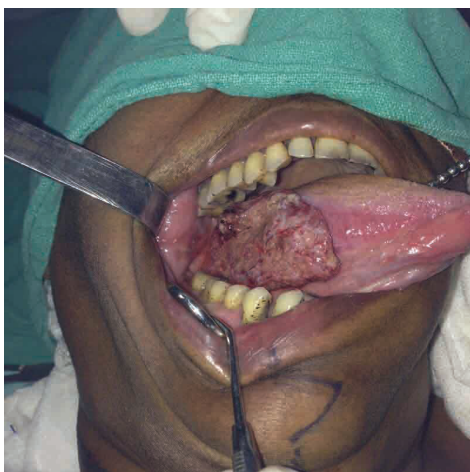
The lip-splitting approach can include a mandibular osteotomy to gain additional exposure of the oral cavity and pharynx even when segment of the mandible is not be resected. The lip incision can be extended below the jaw, creating a cheek flap that is reflected posteriorly at the cornmissure of the mouth. The eventual cosmetic outcome depends upon the placement of the incision lines in natural facial creases and recesses along with the careful reapproximation of the lip muscle, subcutaneous tissue, skin, and mucous membrane. The placement of two or three mattress sutures well into the depth of the orbicularis oris muscle during repair should be



**Figure-2:** Schematic diagram of modified lip splitting incision



**Figure-3:** Exposure following modified lip splitting incision



**Figure-1:** Incision markings on patient



**Figure-4:** 2 weeks, post operative photograph of the patient.

considered of particular attention to prevent late notching of the lower lip. Similarly, the most important external landmark to realign is the vermillion border.<sup>2</sup>

To achieve the postoperative functional and aesthetic results after lip splitting approach, adherence to basic surgical principles and correct closure of incision are critical. This includes suturing in layers and careful approximation of previously determined skin points. Special attention should also be paid to proper alignment of vermillion border, which is especially prominent aesthetic unit. Various authors have proposed modifications, by breaking the incision line to better conform to the anatomic contour of region.<sup>7</sup>

Vertical splitting of the lower lip has proved to be an unreliable procedure due to the presence of a long straight scar and result in a notched vermilion. A vertical depression is formed in cases of transection of the chin, disturbing its smoothness and roundness, which gets even more accentuated on facial movement.<sup>3</sup>

The modified splitting technique, therefore, used in our case seems to be an immense improvement in allowing accurate repair of the vermilion and the orbicularis oris muscle, following the anatomic contour of the lower lip and chin, staying close to the midline to avoid nerve injury, safe extension with the neck incisions avoiding injury to the marginal mandibular nerve, giving the most satisfactory aesthetic and functional results and the likelihood of scar contraction being very less. In our experience modified lip splitting incision used here is ideal to approach the posterolateral tongue carcinomas and also help in rapid recovery from this type of mutilating surgeries.

## CONCLUSION

A number of modifications of lip split incisions have been used to approach various regions of the oral cavity. The modified lip split incision used in our case has offered good aesthetic outcomes with no scar appearance, minimal scar contracture, optimum functional results, adequate access and exposure and has proved to be a safe extension with the neck dissection incision.

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**Source of Support:** Nil; **Conflict of Interest:** None

**Submitted:** 28-03-2016; **Published online:** 30-04-2016